



ToughGard® R Duct Liner is used primarily as an acoustical liner in HVAC sheet metal ducts to absorb unwanted crosstalk, equipment and air rush noise. This product can be used in most types of heating and cooling duct systems, operating at velocities up to 6,000 fpm (30.5 m/s) and temperatures to 250°F (121°C).

### FEATURES & BENEFITS

This product provides excellent thermal properties, exhibits low air flow resistance and meets applicable fire resistance standards and building code requirements. It is durable, easy to clean, and has a factory-applied edge coating that assures sealing of the transverse edges as per SMACNA and NAIMA installation standards.

### COMPOSITION & MATERIALS

Composed of rotary-type glass fibers firmly bonded together with a thermosetting resin overlaid with an extremely tough and durable fire-resistant black composite surface on the airstream side. The airstream surface contains an EPA-registered antimicrobial agent in order to reduce the potential of microbial growth that may affect this product. The antimicrobial properties are intended to protect only this product.

### APPLICATION

ToughGard R Duct Liner should be kept clean and dry during shipping, storage, installation and system operation.

### INSTALLATION

All duct liners must be installed in accordance with the requirements of the NAIMA Fibrous Glass Duct Liner Standards or SMACNA HVAC Duct Construction Standards and the project specification. The liner must be cut and fitted to ensure all joints are neatly and tightly butted with no interruptions or gaps.

All duct liner products must be adhered to the sheet metal ductwork using an adhesive meeting the requirements of ASTM C916. The adhesive film coverage must be a minimum 90% of the metal surface. Additionally, secure duct liner as required to the sheet metal ductwork using mechanical fasteners (impact-driven or weld-secured). These fasteners vary in length and type. Mechanical fasteners of the specified type and length must be used, ensuring no greater than 10% compression of the liner thickness. Maximum fastener spacing must be in accordance with NAIMA or SMACNA standards. ToughGard R provides clean “battered” transverse edges. However, some circumstances will require the use of adhesive to butter raw exposed liner edges. Final job site buttering may be required to coat duct cut-ins and/or minor installation damage.

ToughGard R Duct Liner fabricated duct systems must be kept clean and dry from the point of fabrication through job site installation and system commissioning. Special precautions at the job site may be necessary to accomplish this.

### TECHNICAL DATA

#### APPLICABLE STANDARDS, CODE COMPLIANCE

Model Building Codes:

- ICC
- California Title 24

Material Standards:

- ASTM C1071 Type I
- GREENGUARD® Gold Certified

Fire Safety Standards:

- NFPA 90A, NFPA 90B

#### FIRE RESISTANCE

Fire Hazard Classification:

- UL 723, ASTM E84, CAN/ULC-S102
- Max. Flame Spread Index: 25
- Max. Smoke Developed Index: 50

Limited Combustible:

- NFPA 259
- < 3,500 btu/lb

Acoustical Performance: See table on other side

Thermal Performance: See table on other side

### PHYSICAL / CHEMICAL PROPERTIES

PROPERTY (UNIT)	TEST	VALUE
Operating Limits: Temperature Air Velocity	ASTM C411 ASTM C1071	250°F / 121°C 6,000 fpm (30.5 m/s)
Water Vapor Sorption:	ASTM C1104	3%
Odor Emission:	ASTM C1304	Pass
Corrosion Resistance:	ASTM C665 ASTM C1617	Pass
Fungi Resistance:	ASTM C1338 ASTM G21	Pass

## AVAILABLE SIZES

Available standard sizes are listed in the table. Contact CertainTeed for availability and minimum order quantities.

TYPE	DENSITY	THICKNESS		LENGTH		WIDTH	
		IN	MM	FT	M	IN	MM
1.5	1.5 pcf (24 kg/m <sup>3</sup> )	1	25	100	31	35 ½ - 60	902-1537
		1½	38	70	21	35 ½ - 59 ½	902-1511
		2	51	50	15	35 ½ - 60	902-1537
2.0	2.0 pcf (32 kg/m <sup>3</sup> )	½	13	100	31	35 ½ - 59 ½	902-1511

## THERMAL PERFORMANCE

TYPE	PRODUCT		K-VALUE		C-VALUE		R-VALUE	
	THICKNESS		BTU·IN H·FT <sup>2</sup> ·°F	W M·°C	BTU H·FT <sup>2</sup> ·°F	W M <sup>2</sup> ·°C	H·FT <sup>2</sup> ·°F BTU	M <sup>2</sup> ·°C W
	IN	MM						
1.5	1	25	0.24	0.033	0.24	1.32	4.2	0.74
	1½	38	0.25	0.036	0.17	0.94	6.0	1.06
	2	51	0.26	0.037	0.13	0.72	8.0	1.41
2.0	½	13	0.25	0.034	0.48	2.65	2.1	0.37

Thermal conductance (C) and resistance (R) values are derived from the material thermal conductivity (K) value. Tested in accordance with ASTM C518 at 75°F (24°C) mean temperature.

## ACOUSTICAL PERFORMANCE

TYPE	PRODUCT		ABSORPTION COEFFICIENTS @ OCTAVE BAND CENTER FREQUENCIES (HZ)						NRC
	THICKNESS		125	250	500	1000	2000	4000	
	IN	MM							
1.5	1	25	0.18	0.28	0.73	0.85	0.91	0.90	0.70
	1½	38	0.23	0.50	0.87	0.92	0.93	0.93	0.80
	2	51	0.37	0.76	1.02	1.00	0.92	0.92	0.95
2.0	½	13	0.10	0.17	0.43	0.59	0.73	0.75	0.50

Sound absorption tested in accordance with ASTM C423 using Type A mounting per ASTM E795.

## MAINTENANCE

An inspection and preventative maintenance program for the HVAC system is recommended to ensure optimum performance.

## WARRANTY

Refer to CertainTeed's Limited Warranty.

## AVAILABILITY AND COST

Manufactured and sold throughout the United States. For availability and cost, contact your local distributor or call CertainTeed Sales Support Group at 800-233-8990



USGBC® and the related logo are trademarks owned by the U.S. Green Building Council and are used with permission.



## CertainTeed

CEILINGS • DECKING • FENCE • GYPSUM • INSULATION • RAILING • ROOFING • SIDING • TRIM  
20 Moores Road, Malvern, PA 19355 800-233-8990 certainteed.com